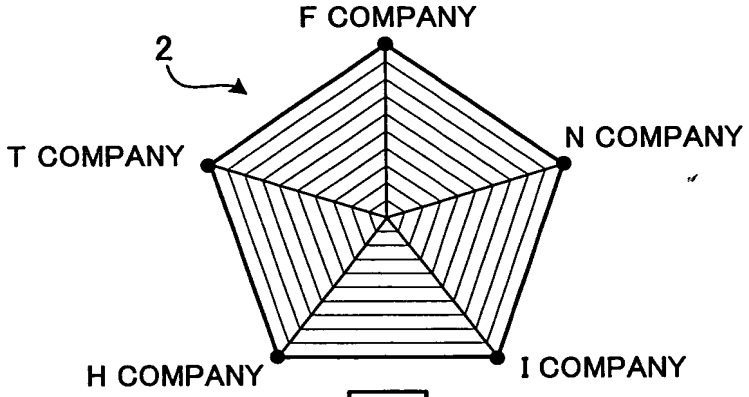
TITLE: PROGRAM AND METHOD FOR DISPLAYING A RADAR CHART
INVENTORS: Toshihiko FUSHIMI, et al.
SERIAL NO.:
DOCKET NO.: 1095.1285
Filed 9/29/03

(S1) JUDGE DEGREE OF ASSOCIATION

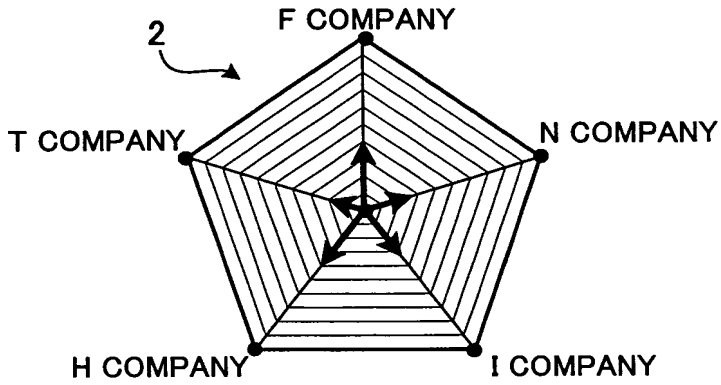
1

ITEM \ MANUFACTURE	F COMPANY	N COMPANY	I COMPANY	H COMPANY	T COMPANY
PRICE	8	5	7	8	3

(S2) SET REFERENCE POINT FOR EACH ELEMENT



(S3) SET POSITION OF KEYWORD



(S4) DRAW KEYWORD

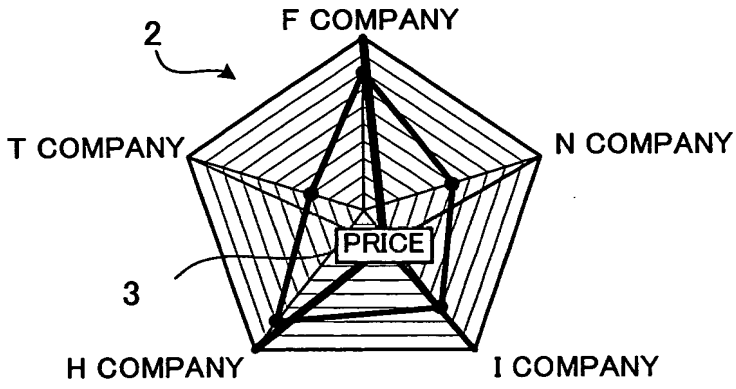


FIG. 1

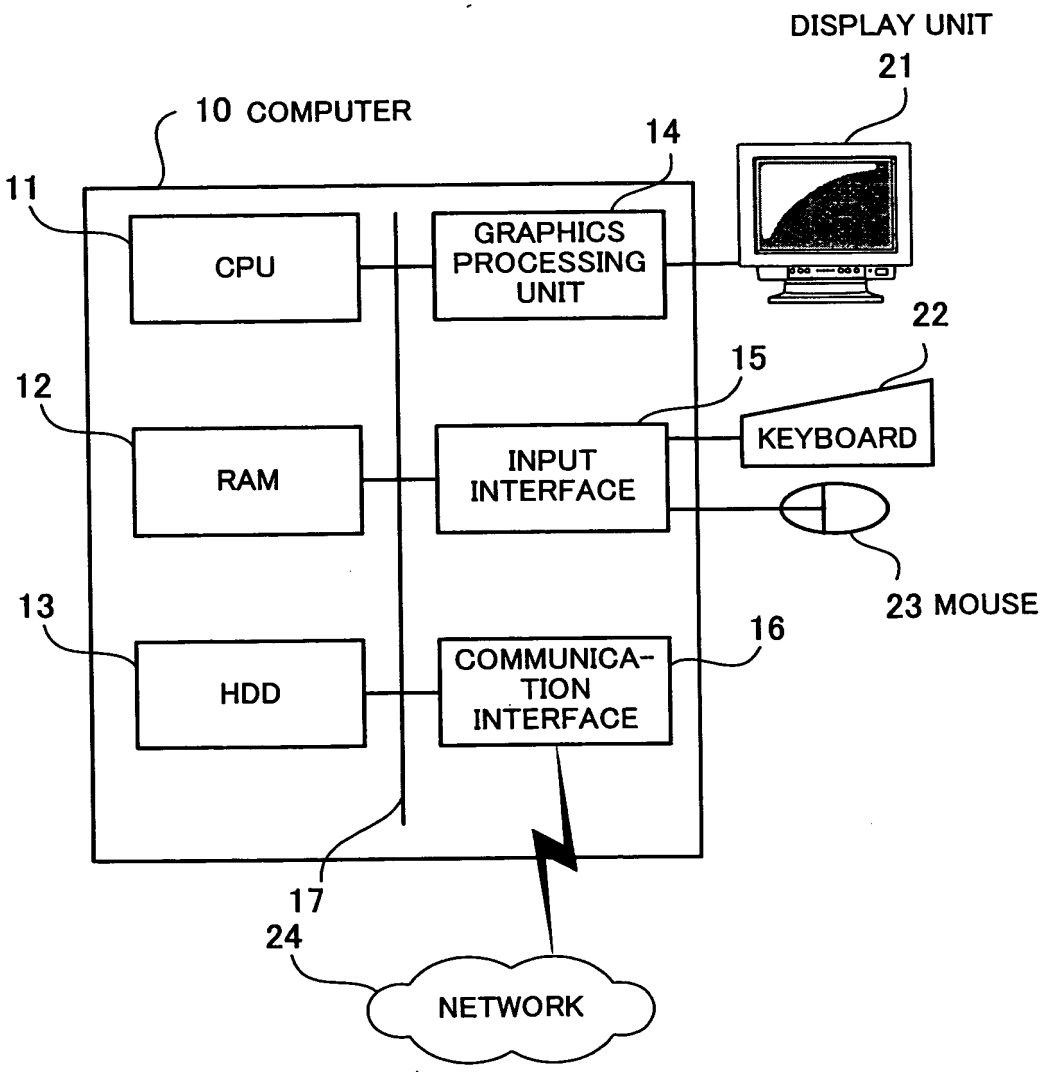

DISPLAY UNIT
21
10 COMPUTER
14
11
CPU
GRAPHICS PROCESSING UNIT
22
15
12
RAM
INPUT INTERFACE
KEYBOARD
23 MOUSE
13
16
HDD
COMMUNICA-TION INTERFACE
17
24
NETWORK

FIG. 2

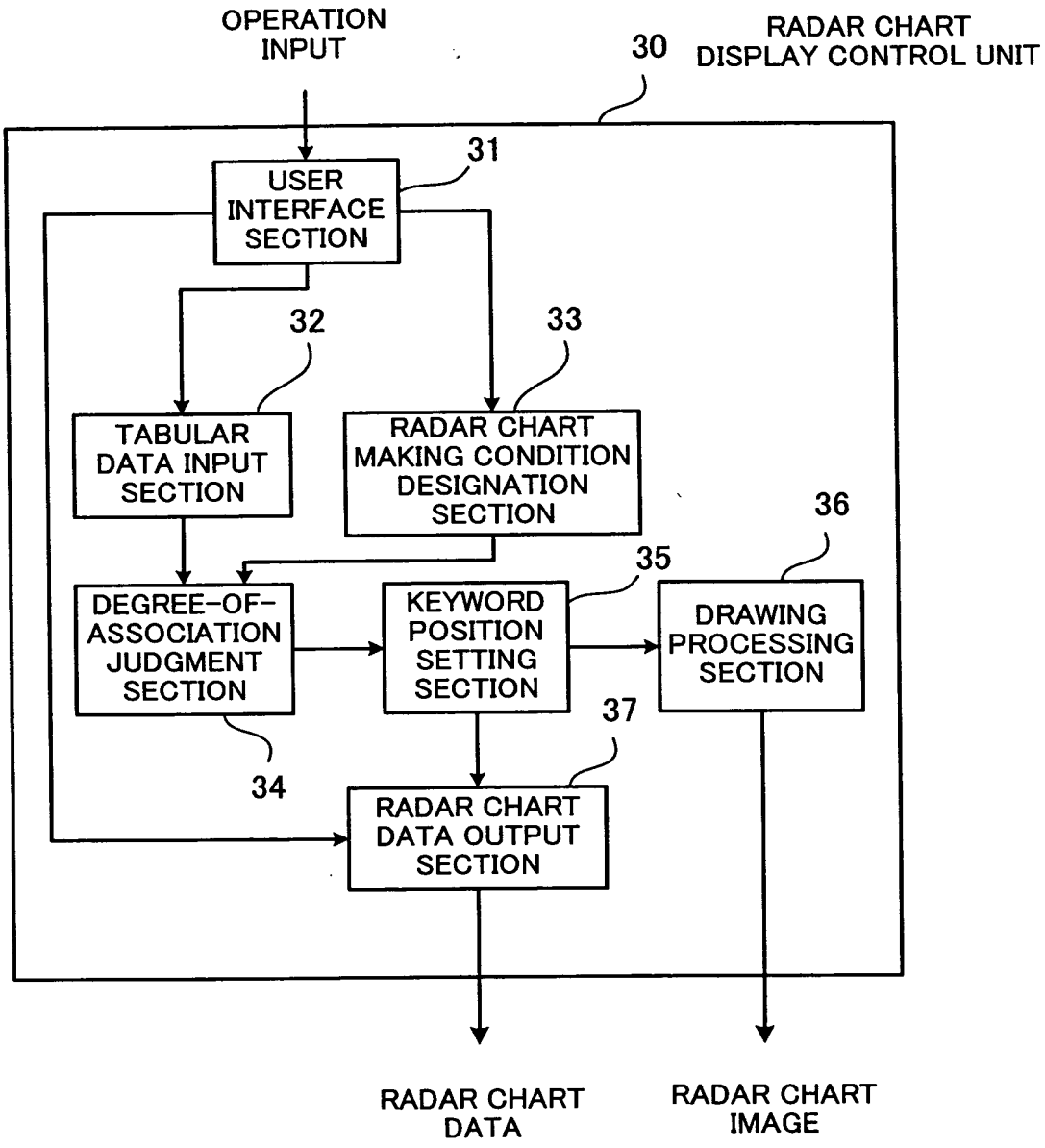

OPERATION INPUT
30
RADAR CHART DISPLAY CONTROL UNIT
31
USER INTERFACE SECTION
32
33
TABULAR DATA INPUT SECTION
RADAR CHART MAKING CONDITION DESIGNATION SECTION
36
35
DEGREE-OF-ASSOCIATION JUDGMENT SECTION
KEYWORD POSITION SETTING SECTION
DRAWING PROCESSING SECTION
37
34
RADAR CHART DATA OUTPUT SECTION
RADAR CHART DATA
RADAR CHART IMAGE

FIG. 3

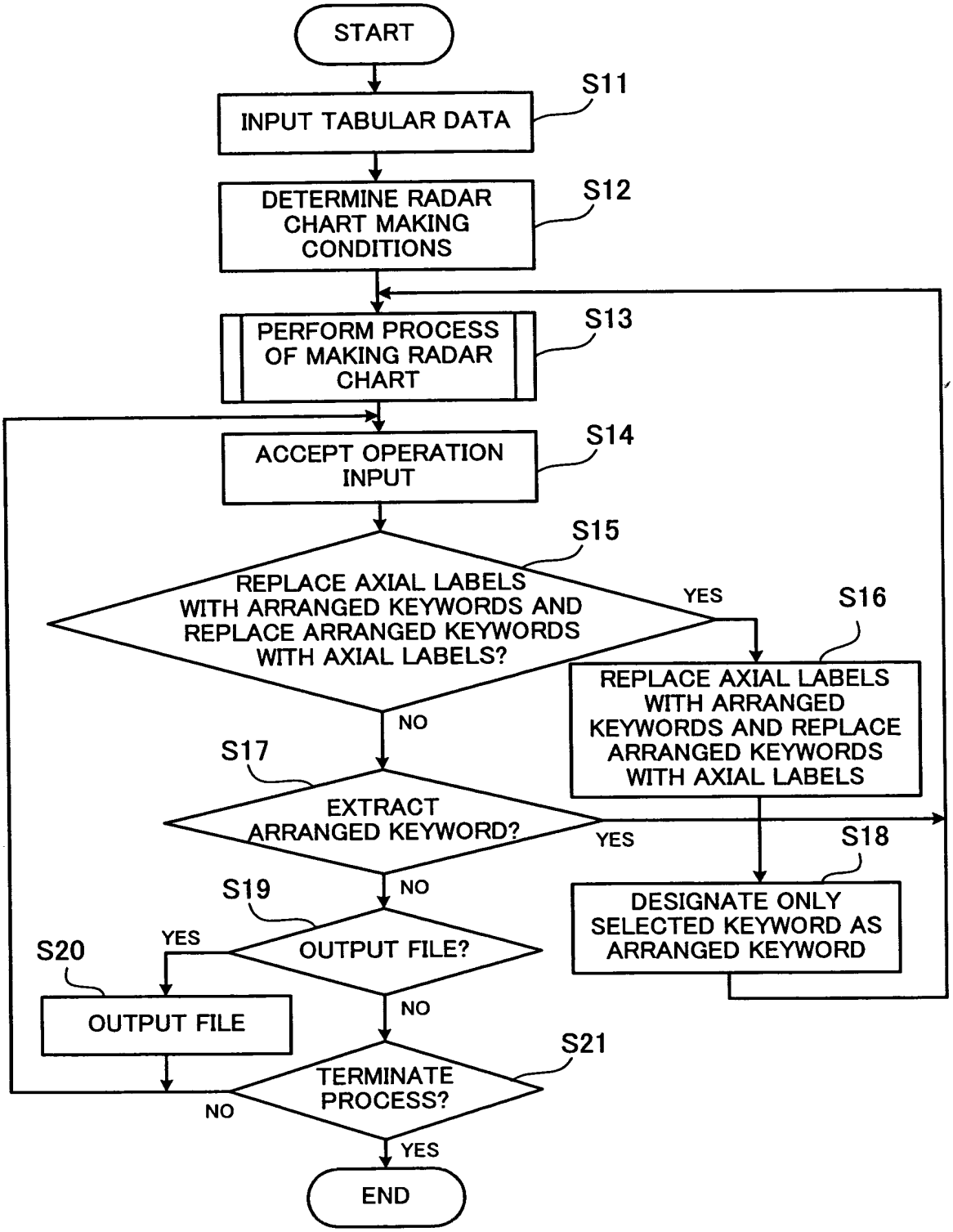

START
S11
INPUT TABULAR DATA
S12
DETERMINE RADAR CHART MAKING CONDITIONS
S13
PERFORM PROCESS OF MAKING RADAR CHART
S14
ACCEPT OPERATION INPUT
S15
REPLACE AXIAL LABELS WITH ARRANGED KEYWORDS AND REPLACE ARRANGED KEYWORDS WITH AXIAL LABELS?
YES
S16
REPLACE AXIAL LABELS WITH ARRANGED KEYWORDS AND REPLACE ARRANGED KEYWORDS WITH AXIAL LABELS
NO
S17
EXTRACT ARRANGED KEYWORD?
YES
S18
DESIGNATE ONLY SELECTED KEYWORD AS ARRANGED KEYWORD
NO
S19
OUTPUT FILE?
YES
S20
OUTPUT FILE
NO
S21
TERMINATE PROCESS?
NO
YES
END

FIG. 4

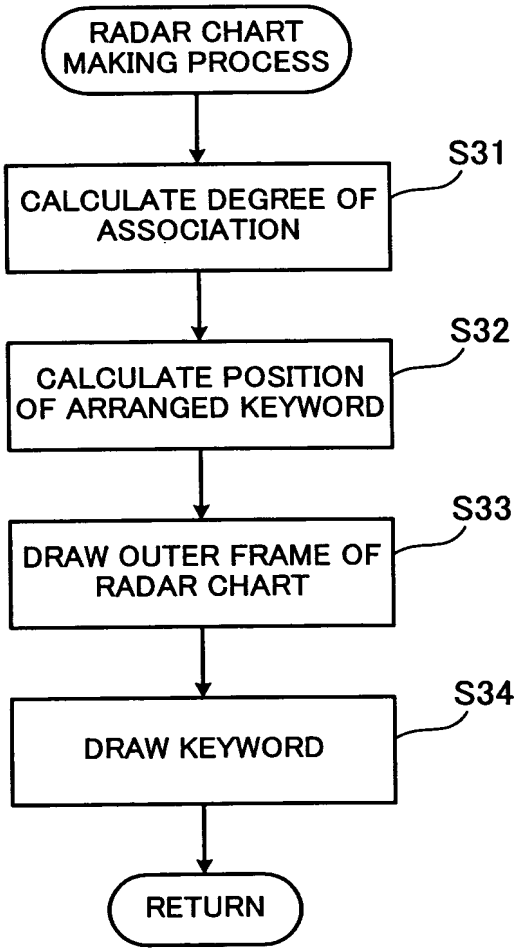

RADAR CHART MAKING PROCESS
S31
CALCULATE DEGREE OF ASSOCIATION
S32
CALCULATE POSITION OF ARRANGED KEYWORD
S33
DRAW OUTER FRAME OF RADAR CHART
S34
DRAW KEYWORD
RETURN

FIG. 5

41

NAME OF MANUFAC-TURER / EVALUATION ITEM	F COMPANY	N COMPANY	I COMPANY	H COMPANY	T COMPANY
PRICE	8	5	7	8	3

FIG. 6

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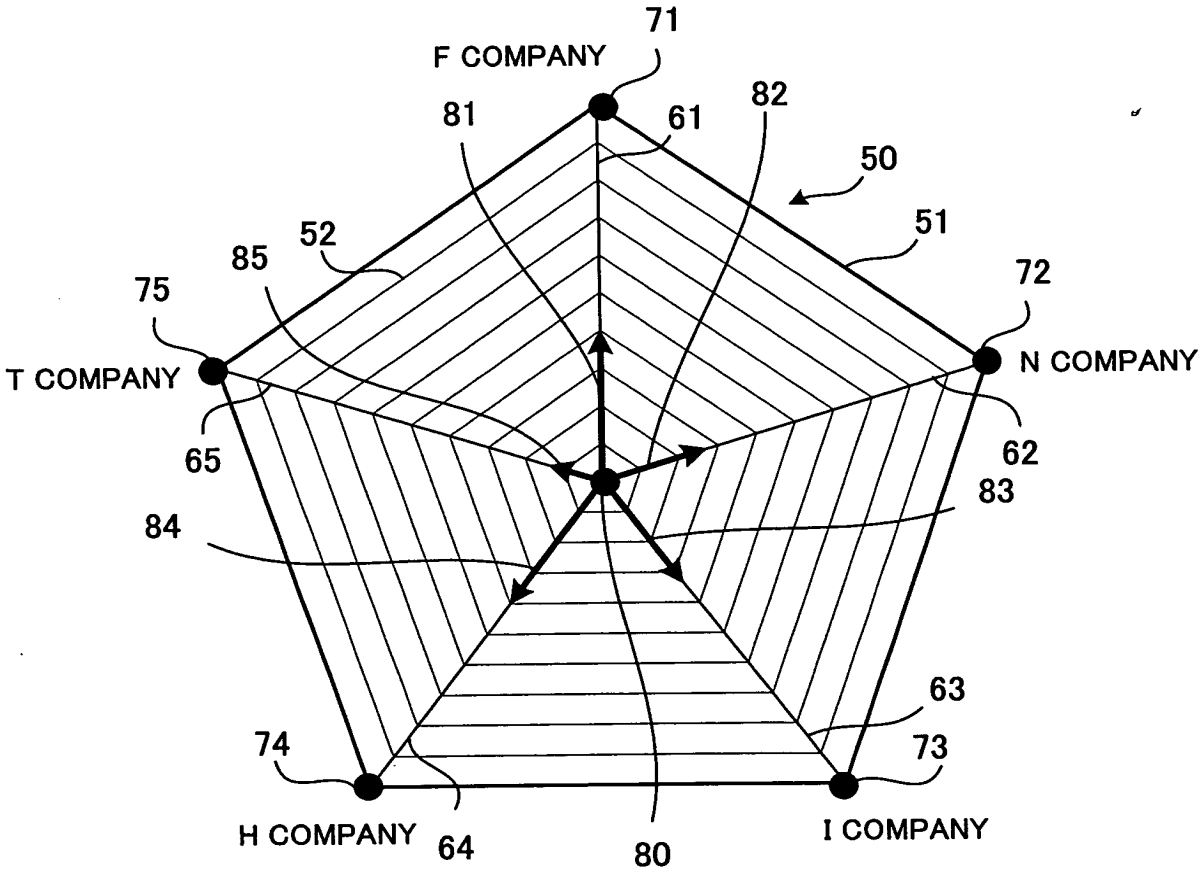

FIG. 7

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PRICE

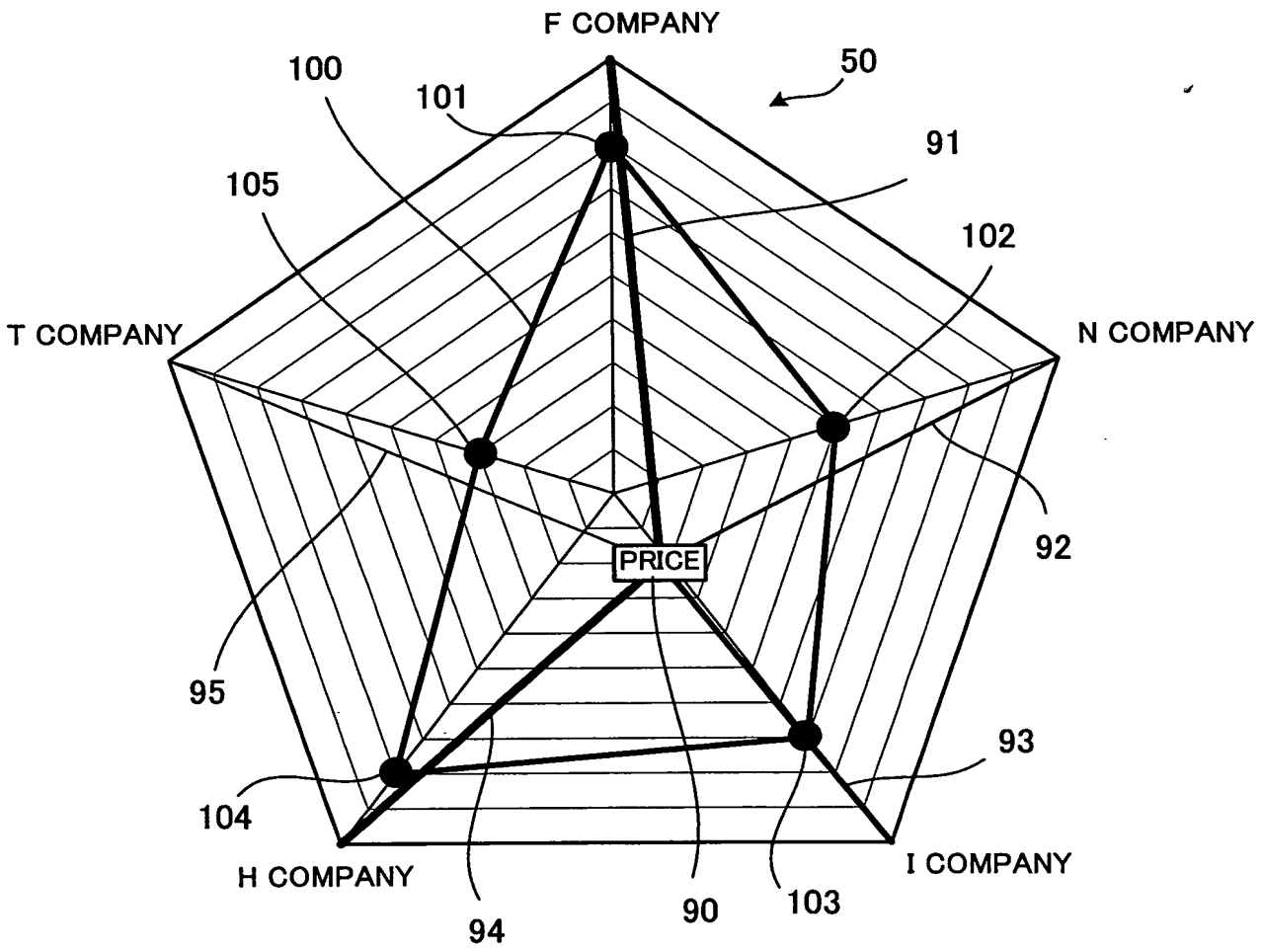

FIG. 8

42

NAME OF MANUFAC-TURER / EVALUA-TION ITEM	F COMPANY	N COMPANY	I COMPANY	H COMPANY	T COMPANY
PRICE	8	5	7	8	3
FUNCTION	7	4	9	6	5
SUPPORT	10	8	6	9	7
EXPANDABILITY	6	9	10	5	9
DESIGN	5	10	9	7	9
PORTABILITY	7	8	9	6	10

FIG. 9

EXAMPLE OF CONCEPT MAPPING
ON RADAR CHART ON WHICH ALL
ITEMS ARE DISPLAYED

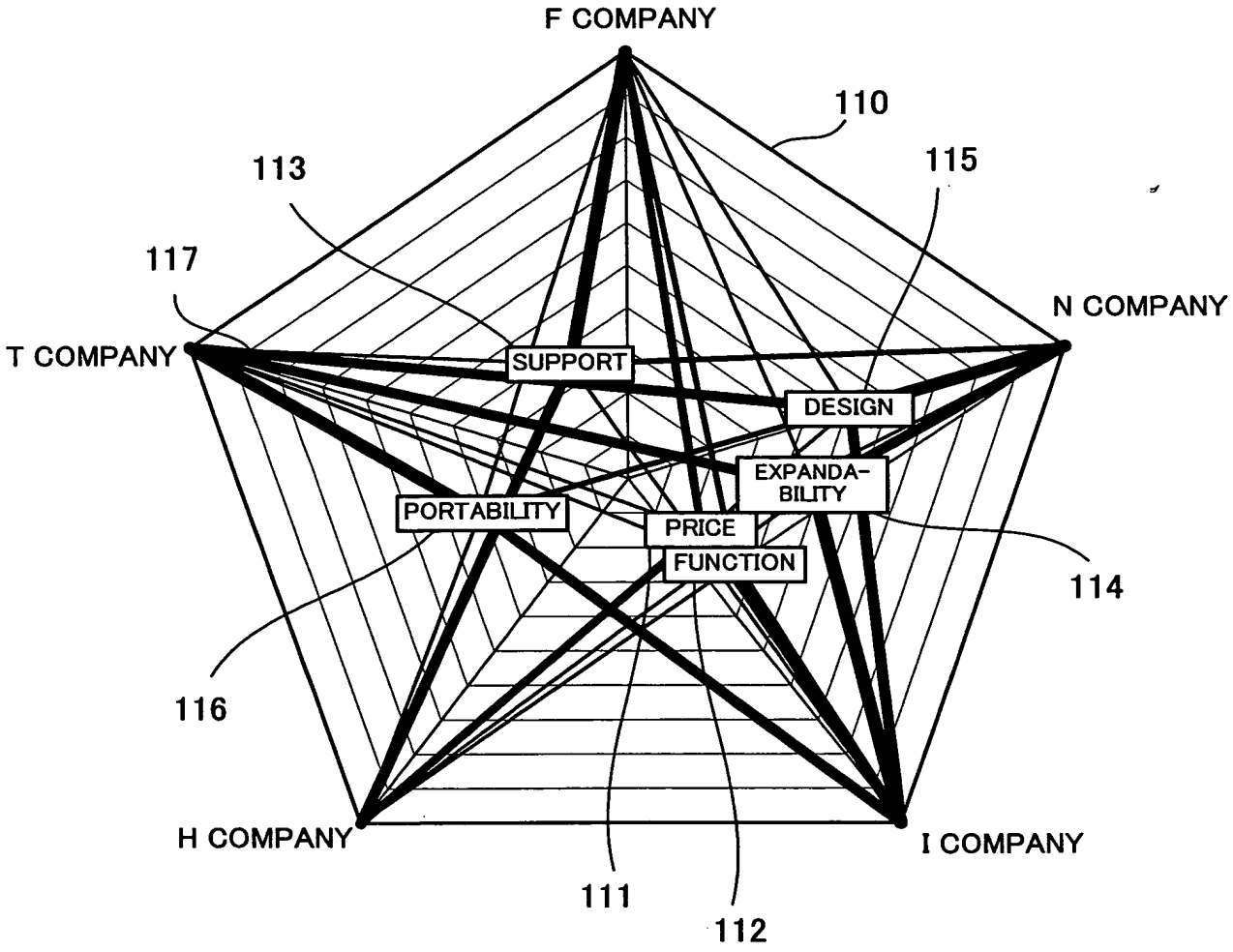

FIG. 10

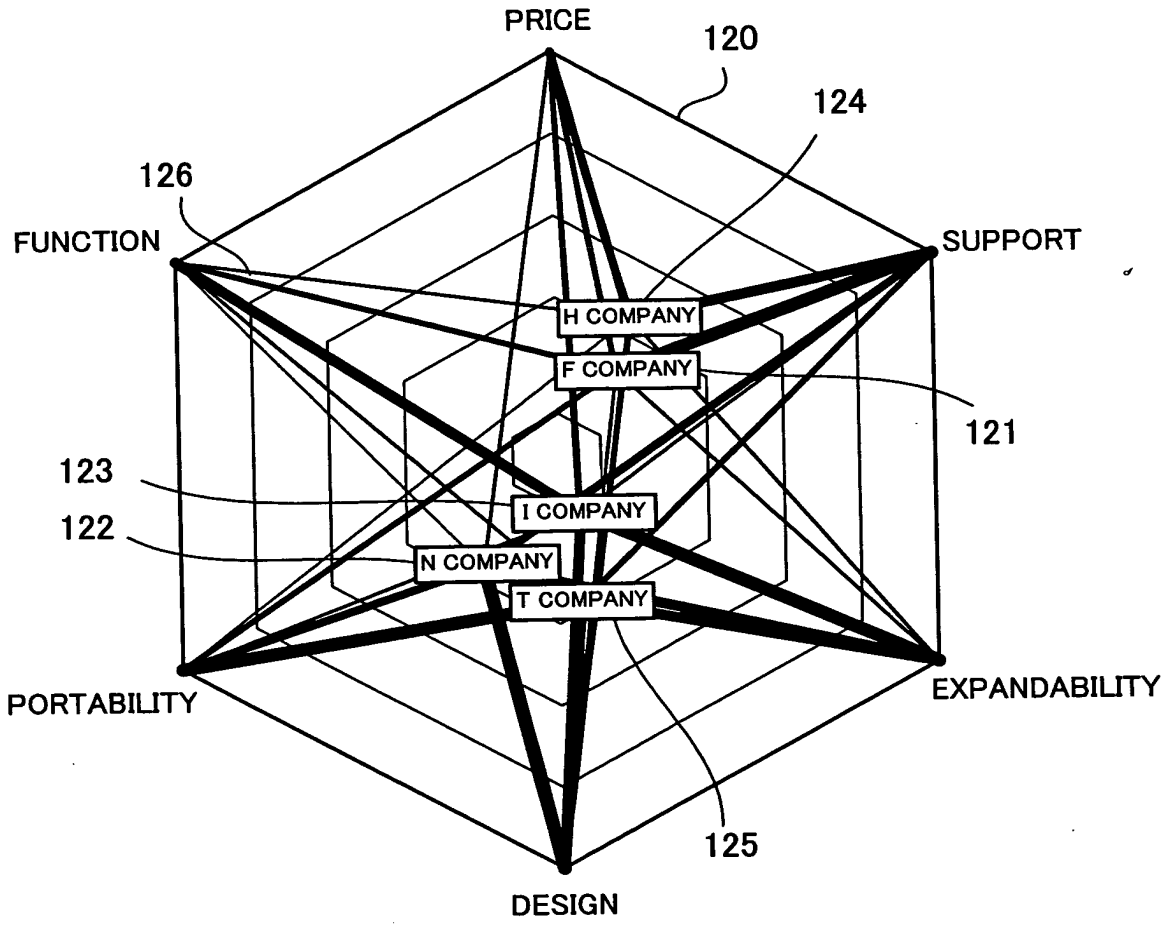
PRICE
120
124
126
FUNCTION
SUPPORT
H COMPANY
F COMPANY
121
123
I COMPANY
122
N COMPANY
T COMPANY
PORTABILITY
EXPANDABILITY
125
DESIGN

FIG. 11

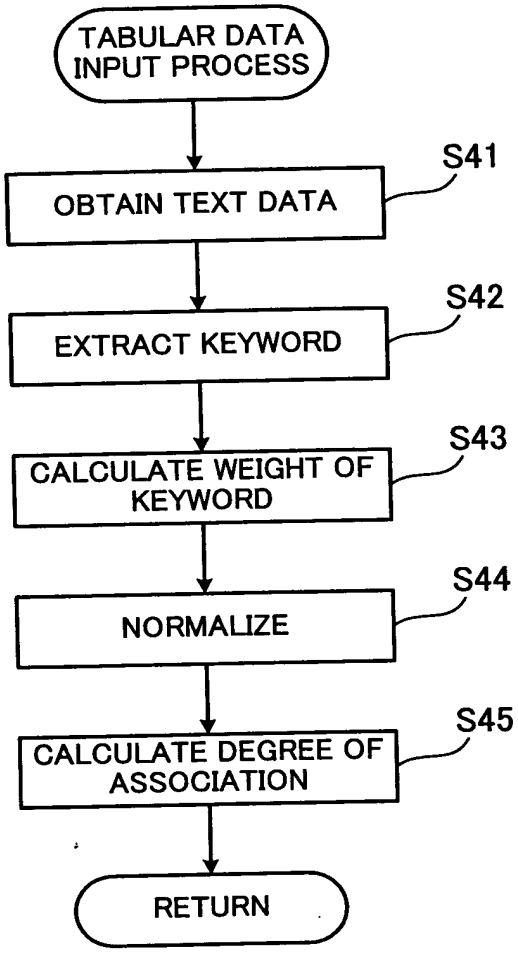
TABULAR DATA INPUT PROCESS
S41
OBTAIN TEXT DATA
S42
EXTRACT KEYWORD
S43
CALCULATE WEIGHT OF KEYWORD
S44
NORMALIZE
S45
CALCULATE DEGREE OF ASSOCIATION
RETURN

FIG. 12

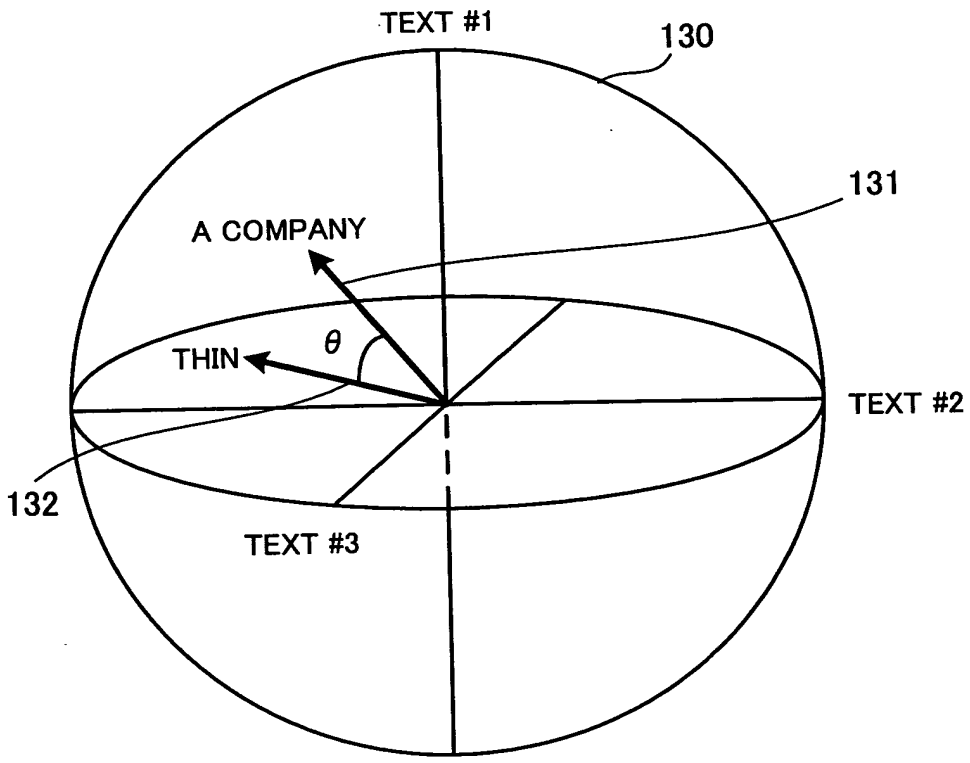

FIG. 13

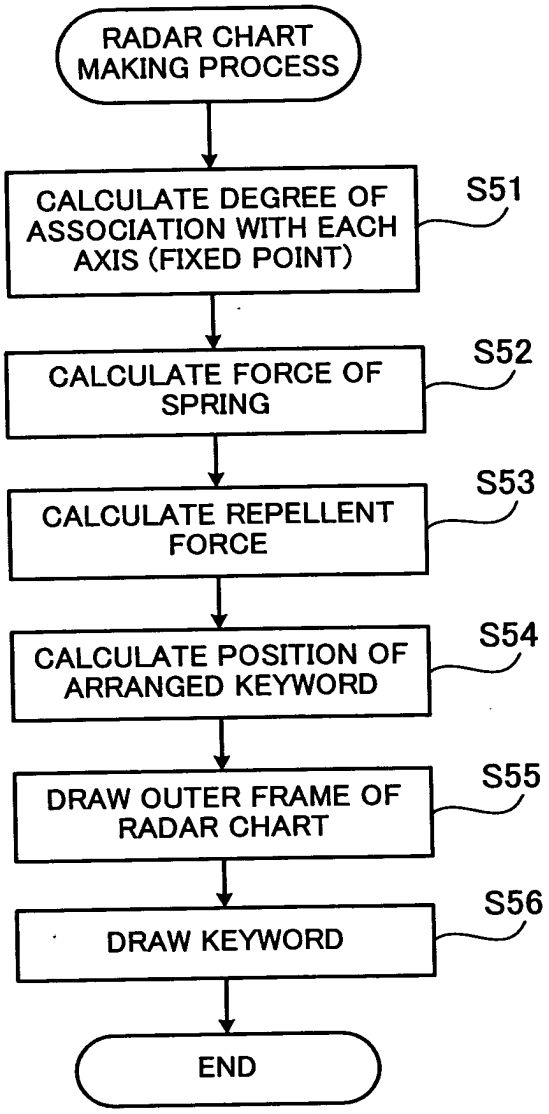
RADAR CHART MAKING PROCESS
CALCULATE DEGREE OF ASSOCIATION WITH EACH AXIS (FIXED POINT)
S51
CALCULATE FORCE OF SPRING
S52
CALCULATE REPELLENT FORCE
S53
CALCULATE POSITION OF ARRANGED KEYWORD
S54
DRAW OUTER FRAME OF RADAR CHART
S55
DRAW KEYWORD
S56
END

FIG. 14

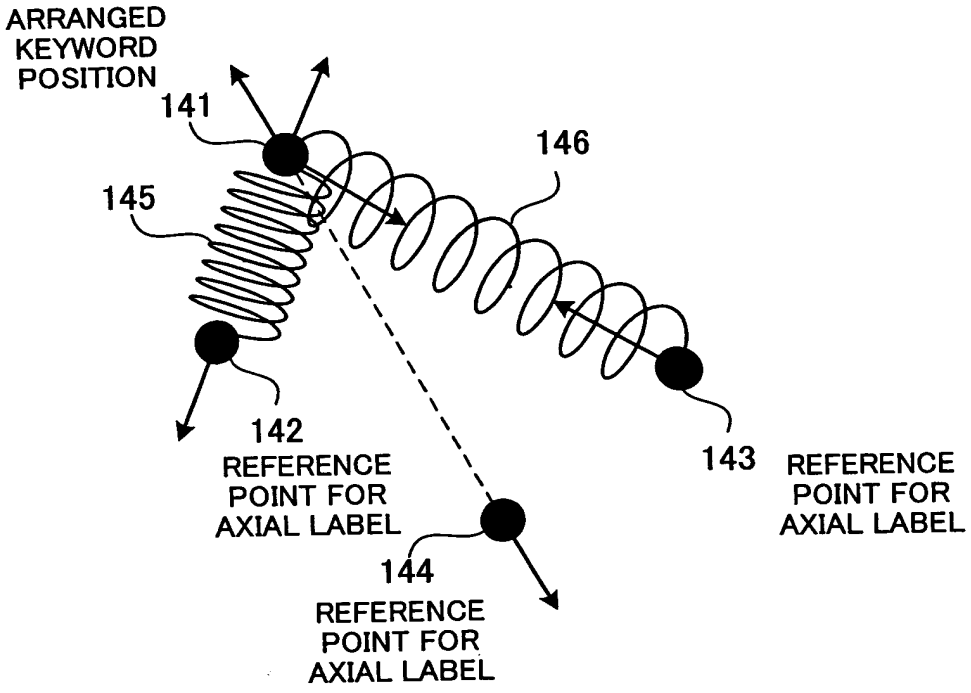
ARRANGED
KEYWORD
POSITION
141
146
145
142
REFERENCE
POINT FOR
AXIAL LABEL
143
REFERENCE
POINT FOR
AXIAL LABEL
144
REFERENCE
POINT FOR
AXIAL LABEL

FIG. 15

43 TEXT DATA

MANUFACTURER	OPINION
A COMPANY	COMPUTERS ARE USER-FRIENDLY
B COMPANY	A SUPPORT SETUP IS COMPLETE
C COMPANY	THERE ARE MANY PIECES OF PRE-INSTALLED SOFTWARE
A COMPANY	DESIGNS ARE GOOD
⋮	⋮

FIG. 16

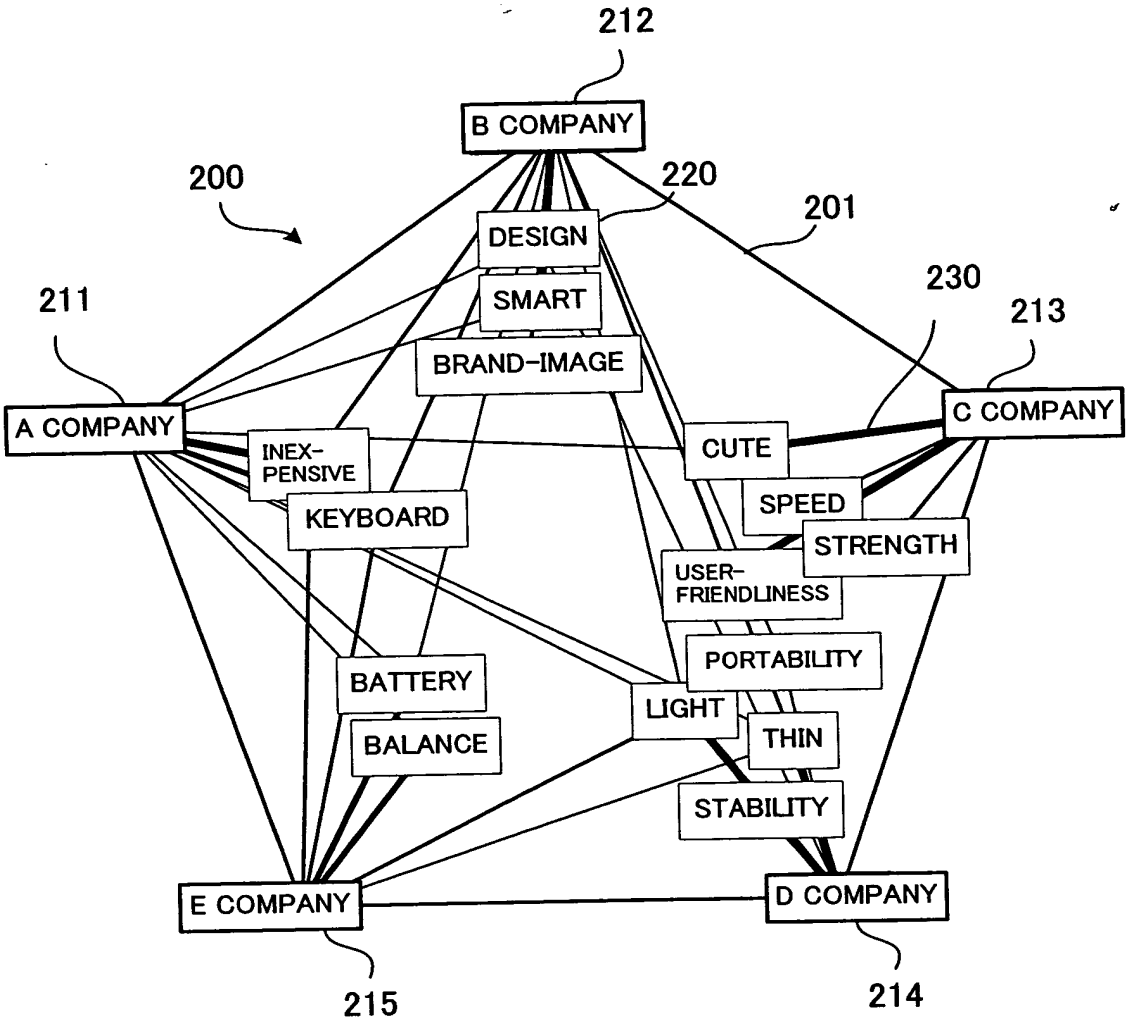
212
B COMPANY
200
220
201
DESIGN
SMART
230
213
211
BRAND-IMAGE
A COMPANY
C COMPANY
INEX-
PENSIVE
CUTE
SPEED
KEYBOARD
STRENGTH
USER-
FRIENDLINESS
PORTABILITY
BATTERY
LIGHT
BALANCE
THIN
STABILITY
E COMPANY
D COMPANY
215
214

FIG. 17

ALGORITHM	SPRING CHARACTERISTIC		FEATURE	CHARACTERISTIC
	STRENGTH (C_s)	NATURAL LENGTH(d_0)		
1−1	CONSTANT	CONSTANT	HAS THE SAME CHARACTERISTICS AS THE EADES SPRING MODEL. THE DEGREE OF ASSOCIATION CAN BE SHOWN BY THE THICKNESS OF A RELATIONAL LINE.	AN ARRANGEMENT MAP TENDS TO SPREAD.
1−R	DEGREE OF ASSOCIATION	CONSTANT	A STRONGER FORCE WILL ACT BETWEEN KEYWORDS BETWEEN WHICH THE DEGREE OF ASSOCIATION IS HIGHER. THE SPREAD OF AN ARRANGEMENT MAP IS RESTRAINED SLIGHTLY.	IF SIMILAR RELATIONSHIPS EXIST AMONG MANY KEYWORDS, THEY TEND TO GATHER IN THE CENTER.
R−R	DEGREE OF ASSOCIATION	1/DEGREE OF ASSOCIATION	A STRONGER FORCE WILL ACT BETWEEN KEYWORDS BETWEEN WHICH THE DEGREE OF ASSOCIATION IS HIGHER. THE SPREAD OF AN ARRANGEMENT MAP IS RESTRAINED SLIGHTLY AND KEYWORDS HAVE A STRONG TENDENCY TO FORM A CLUSTER.	IF SIMILAR RELATIONSHIPS EXIST AMONG MANY KEYWORDS, THEY GATHER IN THE CENTER.

FIG. 18

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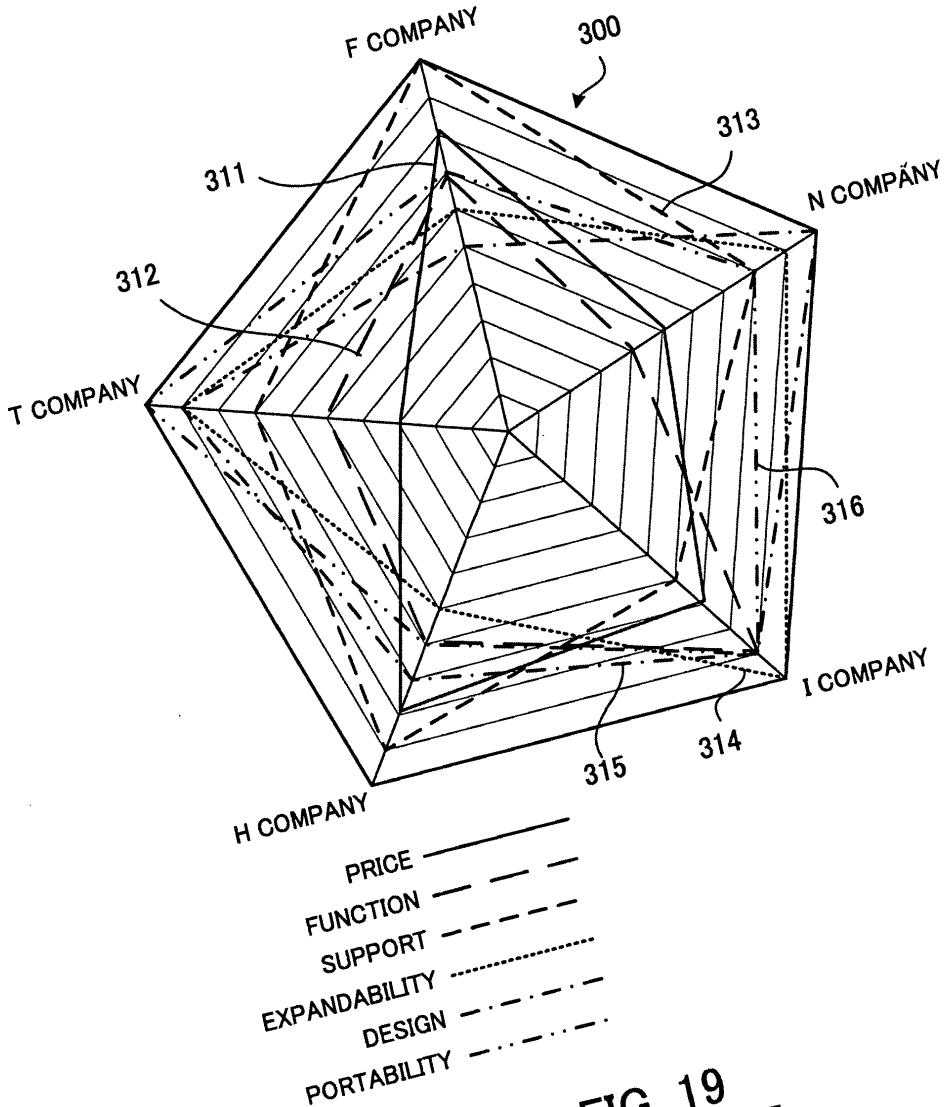

FIG. 19
PRIOR ART

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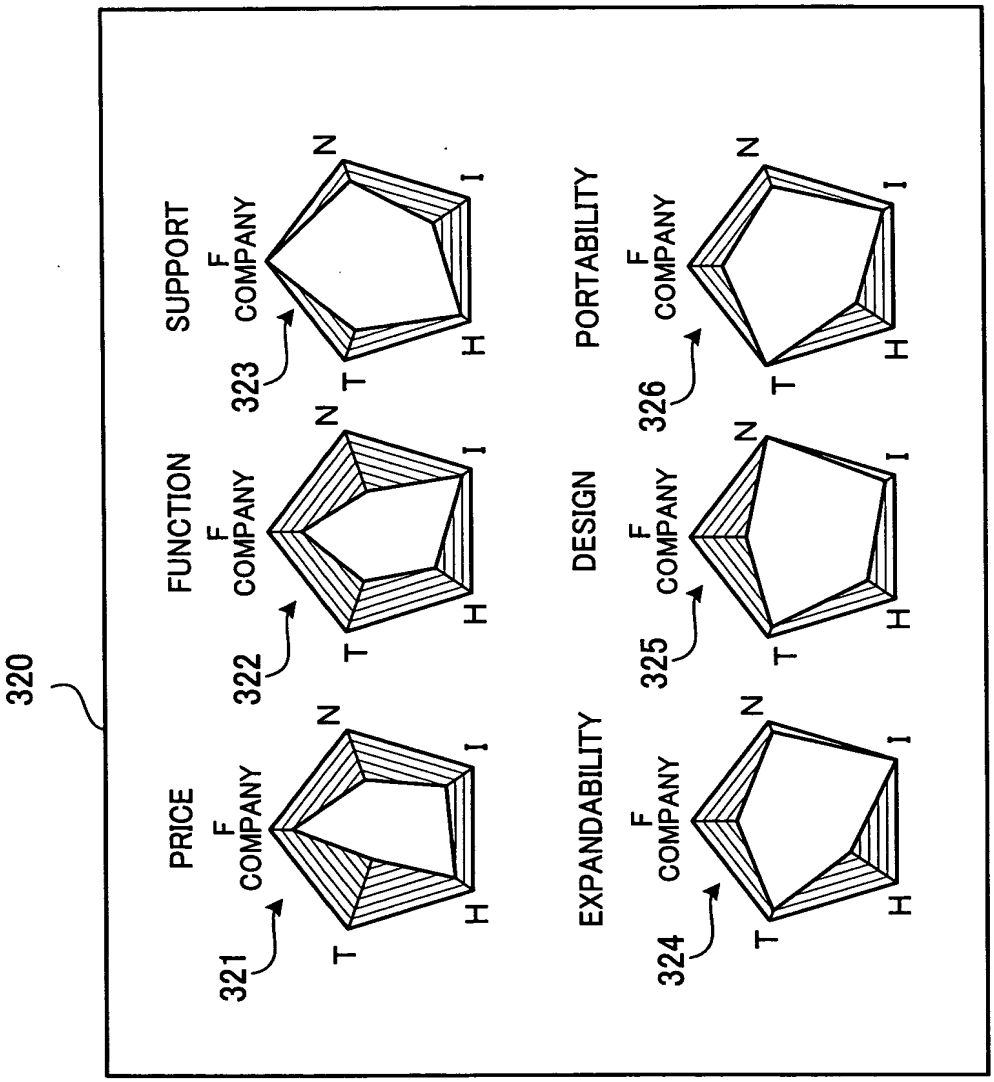

FIG. 20
PRIOR ART